Real Estate Portfolio Management Practices of Pension Funds and Insurance Companies in the Netherlands: A Survey

*Dirk P. M. De Wit**

Abstract. **Pension funds and insurance companies in the Netherlands allocate, on average, over 15% to equity real estate. This suggests that they hold different beliefs and/or apply different decision rules than their U.S. counterparts, who typically have allocated only about 4% of their wealth to real estate. A personal survey was conducted to test whether the findings of similar (mail) surveys on U.S. real estate portfolio management practices also hold for Dutch institutions. Unlike the Americans, for example, the Dutch are found to not systematically adjust for risk and to invest in real estate because of its inflation-hedging capacities.**

Introduction

Several surveys have been conducted on U.S. real estate portfolio management practices and investment goals. These surveys may provide a better understanding of the possible acceptance of new ideas on portfolio management, which should enhance the efficiency of academic research. The survey discussed in the present paper extends the findings of this literature in two directions. First, lengthy face-to-face interviews have been conducted with representatives of the Dutch institutions responsible for investment policy making, most often managing directors. In contrast, most previous surveys have used self-administered questionnaires, which have some clear disadvantages to personal interviews.

Second, the survey relates to institutional investors in the Netherlands,[1] who hold, on average, much larger percentages of equity real estate than their U.S. counterparts. Dutch investors have long been known to be among the most active foreign investors in U.S. real estate.[2] Institutional investors in the U.S., on the other hand, seem to restrict themselves to domestic real estate investments. Ziobrowski and Curcio (1991), Ziobrowski and Boyd (1992) and Ziobrowski and Ziobrowski (1993) find that, due to high currency risks, U.S. real estate is not as attractive to foreign investors as is suggested by the flows of money that have been poured in. Furthermore, Myer, He and Webb (1992), studying the effects of voluntary sell-offs of U.S. real estate, do not find the difference between the abnormal returns to sellers for U.S. versus non-U.S. buyers to be significant at conventional levels. Myer et al. argue that if there are any particular benefits of U.S. real estate to non-U.S. buyers, market conditions must be so favorable to them that they can keep most of the gains to themselves. The aforementioned research, however, suggests that the unilateral

*Stichting De Quintessens, Amsterdam, The Netherlands; and School of Building, University of New South Wales, Sydney 2052, Australia.
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involvement of foreign investors in U.S. real estate cannot be explained from the idea that the benefits of international diversification go into one (foreign) direction. Thus, what type of benefits of U.S. real estate do foreign investors perceive, and why do U.S. investors not see the same benefits of foreign real estate?

An explanation for the unilateral involvement of foreign investors in the U.S. real estate market is possibly found in differences in real estate portfolio management practices or investment goals. Also, the present paper explores the possibility that foreign investors, i.e., Dutch institutional investors, form "biased beliefs" regarding the attractiveness of real estate investments, including U.S. real estate.

In section two, the literature on real estate investor surveys and alternative survey methodologies is discussed. Section three describes the sample of Dutch pension funds and insurance companies, and compares the real estate allocations of Dutch institutions with those of their U.S. counterparts. In section four, the findings from the series of interviews are presented and contrasted with previous empirical findings on real estate portfolio management practices of institutional investors from the U.S. and several other countries. Section five contains the conclusions.

Literature and Research Methodology

Surveys on real estate portfolio management practices have usually been based on mailings of questionnaires, which tend to yield poor response rates of 30% or less. Such surveys have been conducted of U.S. real estate investors by Webb (1984) and Louargand (1992),[3] of Swedish real estate investors by Brzeski, Jaffe and Lundström (1993),[4] and of Australian real estate investors by Boyd and Schwartz (1991).[5] Due to the large population of U.S. institutional investors, the American surveys succeed in having a fairly large sample size in absolute terms. For surveys in smaller countries, however, the often low response rates from mail questionnaires will result in very low sample sizes.[6]

Rydin, Rodney and Orr (1990) use a different methodology. They conducted interviews by telephone with portfolio managers of thirty-nine "randomly" selected institutions in Great Britain. However, the authors do not mention the response rate of their survey.

As opposed to these techniques, a high response rate is expected from face-to-face interviews. A second advantage of personal visits is that the respondent's status in the organization can be accurately identified, which should add to the reliability of the findings. Sample control is important here, because top management ultimately bears responsibility and/or actually decides on sales and purchases of real estate investments. Thus, it is more relevant whether or not top management makes use of, for instance, net present value calculations than whether or not some management assistants do so. Personal interview surveys offer the most potential for control over the sample (see, e.g., Tull and Hawkins, 1984 pp. 133–37).

Third, face-to-face interviews allow for questions being adjusted and explained if the interviewee feels confused by the subject matter. Mail questionnaires, on the other hand, may offer a great chance for respondent confusion. Furthermore, self-administered procedures may incite respondents to read the entire questionnaire prior to answering the questions and/or to change answers to earlier questions after seeing later ones. These potential sources of bias are less likely to affect the results of face-to-face interviews.

However, it is recognized that any adjustment and explanation of confusing questions may result in possible steering by the interviewer of the interviewee on questions. The

author/interviewer, therefore, kept such activities to a minimum. Most questions were asked exactly in the manner in which they are referred to in the text; other ones were accompanied by a list of possible answers.[7] Interviewees were most often confused by questions of the latter type, i.e., those involving some kind of ranking of alternatives. The author/interviewer himself recorded the answers to all questions.

Despite the possible incidence of various response effects in surveys based on different interviewing techniques, Locander, Sudman and Bradburn (1976), for example, do not find any method, including self-administered and personal surveys, consistently superior to all other methods. A personal survey, however, offers the aforementioned benefits of a supposedly high response rate and sample control. In addition, the relatively small distances between any two Dutch cities serve to limit travel costs, so that the benefits of face-to-face contacts could be expected to exceed their costs.

The present study builds on the surveys of Webb and Louargand. However, these surveys are explorative by nature, in that respondents are often allowed to give multiple answers. This renders the findings from these surveys in most cases indeterminate. For instance, if investors are asked which benchmarks they apply when evaluating real estate returns, often two or more benchmarks are mentioned. Although the present survey contains quite similar questions, more discriminate questions are added in order to test whether institutional real estate portfolio management practices in the Netherlands are similar to those in the U.S. Thus, in the aforementioned example, a second question was added if the interviewee mentioned more than just one type of benchmark for evaluating real estate returns; the second question being whether they preferred the outcomes of income capitalization methods or discounted cash flow techniques (see section four). The survey has been structured in this manner to allow for tests on the significance of possible differences between U.S. and Dutch investors.

Sample Description

The sample has been designed to include the largest Dutch institutional investors. Data on the size of the real estate portfolios of these institutions are drawn from the listings in Vastgoedmarkt (1991), where size is defined as book value of assets.[8] The listings are limited to institutions with at least NLG 100 million invested in equity real estate (US$ 52 million at year-end 1989). In addition, following Funken (1990, 1991), large (semi-large) institutions are defined as those owning real estate valued at over NLG 650 million, or US$ 338 million (less than NLG 650 million).

The listings have been modified to reduce the number of institutions that hold a larger than average portion of real estate assets in their portfolio.[9] Thus, institutions with an investment portfolio worth less than NLG 1 billion, or US$ 520 million, have been excluded from the sample, which concerns five institutions. Another three institutions, however, have been added, since they comply with the criteria, but are not listed by Vastgoedmarkt due to the late publishing date of their annual reports. As a result, the sample consists of forty institutions, which are listed in the Appendix.

The pension funds and insurance companies included in the sample represent portfolios valued at US$ 273.4 billion at year-end 1989, which equals at least 75% of the book value of all relevant institutions. Centraal Bureau voor de Statistiek (1990a, 1990b, 1991) subdivides the class of pension funds into "company pension funds," "pension funds for branches of industry" and "remaining (other) pension funds." However, this

distinction is not found to alter the main conclusions from the present survey, and these results are therefore not reported.

Portfolio Allocation to Equity Real Estate

It appears that more than 10% of the total book value of institutional investment portfolios is allocated to equity real estate, which contrasts with the 3.9% of wealth that comparable institutions in the United States have allocated to equity real estate (see Exhibit 1). Moreover, the discrepancy between these figures increases if corrected for the disproportionate size of the *Algemeen burgerlijk pensioenfonds* (Abp). The Abp faces legal restrictions concerning the percent allocation to real estate. At year-end 1989, the arithmetic mean percent allocation to real estate of the Dutch institutional investors is a startling 15.5%, while the median percent allocation is 15.1% (see Exhibit 2). Dutch

Exhibit 1
Percent Allocation to Equity Real Estate Investments by U.S. and Dutch Institutional Investors at Year-End 1989[1]

Country	Equity Real Estate (US$ Bln)	Total Investments (US$ Bln)	Percent of Total
United States	100.0	2,554.7	3.9%
Netherlands	29.4	273.4	10.8

[1]NLG 1.00=US$ 0.52
Source: Louargand (1992) for data on U.S. institutional portfolios, and author for data on Dutch institutional portfolios.

Exhibit 2
Percent Allocation to Equity Real Estate by Dutch Institutional Investors at Year-End 1989

	Median	Mean[1]	Standard Deviation	Two-Sample *t*-Value
All Institutions (n=40)	15.1%	15.5% (8.84)**	8.3	
Large Institutions (n=16)	14.2	16.4 (5.81)**	8.6	
Semi-Large Institutions (n=24)	15.1	14.9 (6.65)**	8.1	.56
Pension Funds (n=27)	16.5	18.4 (9.19)**	8.2	
Insurance Companies (n=13)	9.2	9.4 (5.83)**	3.4	3.71**

[1]*t*-values appear in parentheses; the null hypothesis states that the "true" mean allocation is 3.9%.
**significant at the 1% level

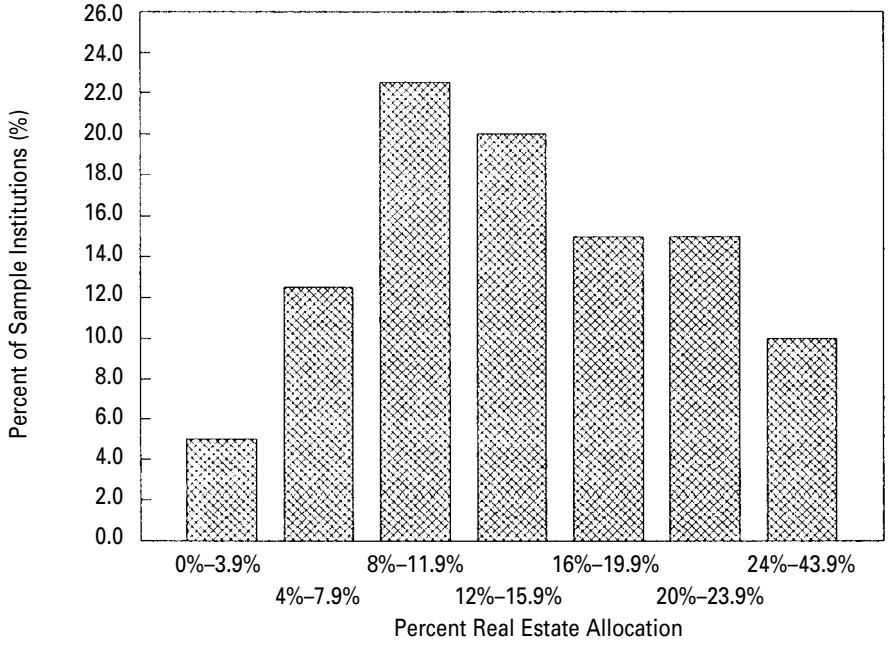
insurance companies, however, appear to allocate substantially less of their wealth to real estate than Dutch pension funds.

Exhibit 3 provides a histogram of the percent allocations of all institutions in this sample, where the range between 24% and 43.9% is taken together as one class. Although the distribution of percent allocations seems skewed to the right, the maximum real estate allocation being 42.5%, the distribution does appear to be unimodal. Therefore, *t*-tests on the mean percent allocations should be warranted, assuming independent observations.

The null hypothesis states that the "true" percent real estate allocation of Dutch institutional investors equals the average of their U.S. counterparts, i.e., 3.9%. However, the *t*-values presented for the total sample and various subsamples are all significantly positive at the 1% level (see Exhibit 2). This strongly supports the contention that Dutch institutional investors allocate more of their wealth to equity real estate than U.S. institutions.

In addition, two-sample *t*-tests have been performed on the differences between the mean percent real estate allocations of large versus semi-large institutions, and pension funds versus insurance companies (see Exhibit 2). While the mean percent allocations of large and semi-large Dutch institutions are not found to differ much statistically, the *t*-value of the means of pension funds and insurance companies appears to be significant. Thus, confirming an earlier observation, Dutch pension funds allocate significantly more of their monies to real estate than Dutch insurance companies. The latter sample, however, still allocates significantly more of its wealth to real estate than U.S. institutional investors.

Exhibit 3
Percent Allocation to Equity Real Estate by Dutch Institutional Investors at Year-End 1989: Histogram of All Institutions



Survey Results

Response

In September 1991, letters were sent to individuals who hold responsibility for their respective institutions' investment policies, inviting them to participate in the series of interviews. In most cases, members of the Board of Directors were contacted. This yielded a response rate of 87.5%, which should have translated into a series of thirty-five face-to-face interviews. However, one of the respondents indicated that, due the organizational circumstances of the institution at the time, inclusion in the series of interviews would not be worthwhile. Although this one respondent was willing to participate, it was mutually agreed not to conduct an interview in this case.

The interviews were scheduled in the months of October and November 1991. The average length of the sessions turned out to be just over ninety minutes.[10] The answers to the questions were written down during the interviews, or shortly thereafter. The respondents we assured strict confidentiality on all topics discussed.

Real Estate Portfolio Diversification

The Dutch investors were asked whether they diversify their real estate portfolios *consciously and rigorously*. Most often an affirmative answer was given, although 30% of the interviewees stated that they did not rigorously pursue diversification (see Exhibit 4). This outcome is in accordance with those of Webb and Louargand, who also found that

Exhibit 4a
Real Estate Portfolio Diversification by Dutch Institutional Investors

	Yes	No	*Chi*-Square Value
All Institutions	23	10	
Large Institutions	8	5	
Semi-Large Institutions	15	5	.68
Pension Funds	18	4	
Insurance Companies	5	6	4.59*

*significant at the 5% level

Exhibit 4b
Comparing Real Estate Portfolio Diversification by U.S. and Dutch Institutional Investors

	n	Yes	No	*Chi*-Square Value
U.S.: Webb (1984)	113	62%	38%	
Louargand (1992)	102	92	8	
Netherlands: Author	33	70	30	26.6**

**significant at the 1% level

a minority of investors "make no systematic attempts" or "(do not use) systematic diversification criteria." Instead of the word "systematic," I chose the somewhat more challenging term "consciously and rigorously." Some of the interviewees hesitated when asked whether they apply such "strong" diversification principles and answered: "Consciously, but not rigorously." This type of answer was categorized as negative. However, as most answers were positive, the finding in previous surveys, that the majority of investors claim to adhere to principles of diversification, seems to hold.

It should be noted, however, that insurance companies pursue diversification less frequently than pension funds. A *chi*-square test on the independence of the survey results and these classes of institutions indicates significance at the 5% level (see Exhibit 4a). In many cases, insurance companies choose to adhere to a strict matching of investments and liabilities per country.

Webb also observes that insurance companies diversify their real estate portfolio less often than pension funds. Unfortunately, Louargand does not provide details on the sorts of institutions participating in his survey. If Louargand's survey is biased towards inclusion of pension funds, this may explain why this author finds a much larger percentage of institutions indicating that they do diversify their real estate portfolio than do both the Webb survey and the present survey. Indeed, the significance of the *chi*-square value, as is reported in Exhibit 4b, seems to be due to the somewhat disparate findings of the Louargand survey.

Further, the interviewees were asked which criterion plays a more important role in diversifying the real estate portfolio, either property type or location. It appears that neither one emerges as the dominant criterion (see Exhibit 5). This is in accordance with the finding of Webb. Furthermore, when asked to rank a larger set of criteria for portfolio building, the majority of the interviewees did not choose criteria other than property type or location, i.e., country, in the first place (see Exhibit 6). This almost identical list of criteria that Louargand put to respondents led to a similar ranking, although they chose for diversification by region instead of by country. U.S. institutional investors, as is apparent from the findings of Webb, rarely diversify their real estate portfolios internationally.

Real Estate Return Measurement

The Dutch investors were asked which benchmarks they apply when evaluating real estate returns. This question is almost identical to that put to American investors by

Exhibit 5
Most Important Criterion for Real Estate Portfolio Building by Dutch Institutional Investors

	Property Type	Location	No Distinction	*Chi*-Square Value
All Institutions	11	13	10	
Large Institutions	5	4	4	
Semi-Large Institutions	6	9	6	.56
Pension Funds	8	9	5	
Insurance Companies	3	4	5	1.37

Exhibit 6
Ranking Frequency of Criteria for Real Estate Portfolio Building by Dutch Institutional Investors (1=most important, 5=least important)

	Ranking Frequency				
Criteria	1	2	3	4	5
Property Type	16	6	2	1	1
Country	13	4	1	1	1
Region	3	6	4	2	1
Metropolitan Area	3	3	3	3	1
Submarket	3	1	4	2	3
Tenant Characteristics	1	1	4	8	2
Lease Terms	–	1	5	6	3
Other	3	2	3	2	–

Webb and Louargand. Both cash-on-cash return, broker's rate of return[11] and internal rate of return were often identified as benchmarks for evaluating real estate returns (see Exhibit 7a). In contrast, the payback period as well as the net present value method are hardly ever mentioned. These findings, as shown in Exhibit 7b, seem to be similar to those from the American surveys, though Webb found the net present value method was accepted by as much as 48% of investors. The Louargand survey and the present survey find much smaller percentages for the use of the net present value method.

Some investors also pointed at "other" criteria, such as social, political and fiscal opportunities or restrictions. Employees' representatives on the boards of pension funds, most often those for branches of industry, indicated that they are not in favour of the parcelling out of rental housing projects for social reasons. Other investors, however, emphasized that such practices are necessary for realizing the desired rate of returns on real estate investments. Political criteria were also put forward. One investor, for instance, explained that local authorities often only consent to "expensive" housing projects on the condition that "affordable" housing units are also included. Fiscal (dis-)advantages are important for insurance companies in examining real estate returns, but not for tax-exempt pension funds.

However, the question for which the answers are listed in Exhibit 7 allows for multiple answers, so that the findings are indeterminate. Instead, Boyd and Schwartz asked Australian investors for the method they considered most relevant in determining real estate returns. Sixty-five percent of the respondents gave priority to discounting current income, whereas the others chose to use the internal rate of return as a benchmark. In line with the Boyd and Schwartz question, the Dutch investors were asked which type of benchmarks they prefer to use: simple income capitalization methods (cash-on-cash return, broker's rate of return or payback period) or more sophisticated methods (internal rate of return or net present value). The frequencies of the answers given by "all institutions," as shown in Exhibit 8, appear to be identical to those reported by Boyd and Schwartz. It can be concluded that most respondents rely on simple income capitalization methods rather than discounted cash-flow techniques. Note that this conclusion is not obvious from inspection of the findings presented in Exhibit 7.

Exhibit 7a
Real Estate Return Measurement by Dutch Institutional Investors[1]

	CCR	BRR	PBP	NPV	IRR	Other
All Institutions	25	22	2	5	19	4
Large Institutions	12	8	0	4	10	3
Semi-Large Institutions	13	14	2	1	9	1
Pension Funds	18	16	1	3	13	2
Insurance Companies	7	6	1	2	6	2

[1]CCR=cash-on-cash return; BRR=broker's rate of return; PBP=payback period; NPV=net present value; IRR=internal rate of return.

Exhibit 7b
Comparing Real Estate Return Measurement by U.S. and Dutch Institutional Investors[1]

	CCR	BRR	PBP	NPV	IRR	Other
U.S.: Webb (1984)	63%	21%	26%	48%	65%	46%
Louargand (1992)	43	2	4	11	72	5
Netherlands: Author	74	65	6	15	56	12

[1]See note to Exhibit 7a.

Exhibit 8
Preference of Dutch Institutional Investors for Income Capitalization Methods versus Discounted Cash Flow Techniques[1]

	CCR,BRR or PBP	NPV or IRR	*Chi*-Square Value
All Institutions	20	11	
Large Institutions	7	5	
Semi-Large Institutions	13	6	.33
Pension Funds	12	8	
Insurance Companies	8	3	.50

[1]See note to Exhibit 7a.

Next, the interviewees who gave preference to the more sophisticated models were asked which one they prefer. It is indicated *unanimously* that they prioritize the internal rate of return (see Exhibit 9). This is somewhat surprising, since the net present value model is known for ranking alternative equity investment opportunities in a way consistent with the commonly accepted goal of wealth maximization. When properties differ in size and distribution of cash flows and are ranked on the basis of their internal rates of return, inconsistent decisions may result.

Some interviewees explained that when they calculate internal rates of return, current (net-) rental income is adjusted for inflation. One interviewee observed that, "if inflation

Exhibit 9
Preference of Dutch Institutional Investors for Net Present Value versus Internal Rate of Return[1]

	NPV	IRR	*Chi*-Square Value
All Institutions	0	11	
Large Institutions	0	5	
Semi-Large Institutions	0	6	0
Pension Funds	0	8	
Insurance Companies	0	3	0

[1]See note to Exhibit 7a.

is not taken into account, the internal rate of return equals the cash-on-cash return.'' Some investors declared that experience gave them enough insight beforehand into the outcomes of calculations of, for example, internal rates of return and that they, therefore, felt sufficiently comfortable with figures of cash-on-cash returns. In addition, interviewees indicated that they did not generally take into account possible increases or decreases in future cash-flows. An exception was given by one investor, who explained that, when once evaluating the prospects of an investment in boom-town Almere, the Netherlands, a ''jump'' in rental income five years later had been taken into account, which, at the time, reflected the belief that the local market would have reached maturity by then.

Interviewees did often compare both cash-on-cash returns and internal rates of return with the current capital-market interest rate. The required minimum cash-on-cash return was expressed by one interviewee as ''60% of the current interest rate.'' However, most investors expressed this minimum in a fixed number of percentage points below the capital-market interest rate. On the other hand, the required minimum internal rate of return varied between investors from 0.5 to 1.5 percentage points above the current interest rate. The differences between the required minimum cash-on-cash returns and internal rates of return, were around three percentage points. This is quite consistent with the inflation rate in the Netherlands at the time.

Real Estate Risk Measurement

Webb and Louargand found that only a minority, i.e., some 20%, of American investors, stated that they did not correct for risk when measuring real estate's performance. However, most U.S. investors declared to adjust for risk in a fairly simple manner, namely by either raising the required rate of return or decreasing the expected cash flows. Mean-variance analysis and the use of probability distributions appeared to be much less common practices. It should be noted that only the respondents who answered ''Never'' to the use of any of the listed risk-adjustment methods, would have been included in the category ''No explicit risk adjustment is made.'' Therefore, the findings of Webb and Louargand may overstate the sophistication of U.S. investors.

Boyd and Schwartz find that only 10% of the Australian investors do not correct for risk explicitly. However, for the 90% of investors who do adjust for riskiness, the authors

note the following: "But when asked to explain their methodology most admitted that the only exercises undertaken were basic sensitivity (best and worst scenario) exercises." Boyd and Schwartz conclude that no serious attempts are made to analyse risk but that "the term has become an important buzz word."

In order to test this contention, Dutch investors were asked whether they adjust for equity real estate risk *consciously and rigorously*. A large majority of interviewees, i.e., 79% (see Exhibit 10), stated that they did not systematically adjust for risk. This sharply contrasts with the findings in the American and Australian surveys. However, it appears that large institutions in the Netherlands adjust for risk more often than semi-large organizations. Indeed, a *chi*-square test on the independence of the outcomes and the respective categories indicates significance at the 1% confidence level. Thus, the use of risk-adjustment methods seems to increase with the size of investment portfolios under management.

The interviewees who systematically correct for risk were asked to consider a list of several methods, comparable with the list used by Louargand. The seven interviewees concerned give most weight to: raising the required return, lowering expected cash flows, the use of sensitivity analysis and/or the use of different scenarios. One interviewee, for instance, explained that the individuals involved in the decisionmaking process, who have, for instance, technical or commercial expertise, independently determine some relevant variables and possible scenarios. Then, for each of these scenarios, internal rates of return are calculated. The number of possible outcomes can be as large as forty, which is graphically represented as a scatter diagram. The dispersion of the outcomes is seen as an indication of risk.

Exhibit 10a
Real Estate Risk Measurement by Dutch Institutional Investors

	Yes	No	*Chi*-Square Value
All Institutions	7	26	
Large Institutions	6	7	
Semi-Large Institutions	1	19	7.98**
Pension Funds	3	19	
Insurance Companies	4	7	2.27

**significant at the 1% level

Exhibit 10b
Comparing Real Estate Risk Measurement by U.S. and Dutch Institutional Investors

	n	Yes	No	*Chi*-Square Value
U.S.: Webb (1984)	113	79%	21%	
Louargand (1992)	102	78	22	
Netherlands: Author	33	21	79	45.6**

**significant at the 1% level

The use of probability distributions or Mean/Variance Analysis was not mentioned by any interviewee, although one of them showed the results of an analysis he once made of historic returns and variances of properties in the portfolio. In general, however, Dutch investors do not seem to take into account the stochastic properties of equity real estate returns.

Dutch institutional investors seem nevertheless highly aware of the riskiness of equity real estate investments. Even before the issue was raised, most interviewees declared that they require some minimum cash-on-cash return or allow for some maximum level of vacancy. In addition, many investors require that investment properties meet certain qualitative criteria in order to reduce some uncertainty beforehand. As these risk-management practices were anticipated, the investors were asked whether self-imposed constraints existed with respect to, in particular, property type, size and location.

First, over one-third of all interviewees restrict themselves *consciously* to so-called multi-purpose investment properties, which are not located or designed in such a "unique" way that their marketability is impaired (see Exhibit 11). Interestingly, one interviewee explained that the institution's portfolio contains a property that does not meet the criterion, but has been included, because a long-term lease could be negotiated with the property's cash-on-cash return left unaltered. He agreed that the terms of the particular contract do, in fact, disguise a risk premium. Second, a large majority of all interviewees limit the size of individual real estate investments. The maximum size allowed for varies between interviewees from NLG 10 million to NLG 100 million, i.e., approximately US$ 5–50 million. Most interviewees restrict themselves to investments in the price range of NLG 15–30 million, i.e., approximately US$ 8–16 million, although cooperation with other investors is generally left open in order to invest in higher priced properties. Third, 50% of all interviewees stated that they consciously limited themselves to transparent regional submarkets. Many interviewees refrain from real estate investments in the northeastern part of the country ("We do not invest in Appingedam," or "not in Tietjerksteradeel") or the southwestern part of the country ("not in Terneuzen," or "Oudenbosch doesn't do anything for me").

It is concluded that investors in the Netherlands do not systematically adjust for risk, or use relatively simple methods. Many investors qualitatively control for risk by self-imposed constraints. In comparison with the findings of Webb and Louargand, it seems that Dutch investors are less sophisticated. However, it has been found that large institutions more often adjust for risk than smaller institutions. This may indicate a growing acceptance of more sophisticated risk-adjustment methods for evaluating equity real estate in the near future.

Exhibit 11
Self-Imposed Constraints by Dutch Institutional Investors

	Yes	No
Unique Location and Design	11	18
Property Size	20	11
Transparency of Regional Submarkets	16	16

Goals for Equity Real Estate Investment

Equity real estate investments can be motivated by the hedge against inflation which the asset class is often assumed to provide. Louargand, however, finds that high returns are the most important goal for real estate investments, while "low or negative correlation with stock market returns" or "inflation hedging" are seen as much less important goals. For British investors, Rydin et al. also find that equity real estate is held primarily for its risk-return characteristics, and not for its inflation-hedging capacities.

Surprisingly, a large majority of the interviewees in the present survey stated that real estate should provide a hedge against inflation (see Exhibit 12). Also, this goal is seen as more important than the performance of real estate on its own or within a portfolio context. High (total) returns, low risks and low correlations with returns on other asset classes are deemed to be much less important. Some interviewees noted that cash-on-cash returns of real estate are seen as equally important as its expected function as a hedge against inflation (cf. Exhibit 12). However, most interviewees admitted that cash-on-cash returns itself would not suffice as a rationale for holding real estate.

Numerical support for the relation between inflation rates and the returns of the institution's equity real estate portfolios is generally lacking.[12] As shown in Exhibit 13, most Dutch institutions fail to measure real estate performance. This finding contrasts

Exhibit 12
Goals of Dutch Institutional Investors for Equity Real Estate Investment (1=most important; 5=least important)

	Ranking Frequency			
Goals	1	2	3	4/5
High Rental Revenue	10	7	3	1
High Sale Price	6	6	4	3
Low Risk	1	6	4	2
Low Correlation with Other Assets	7	8	4	1
Hedge against Inflation	20	3	2	2

Exhibit 13
Benchmarks Used by Dutch Institutional Investors for Equity Real Estate Performance Measurement[1]

	CBS	SBV	FWT	Other	None
All Institutions	4	0	3	6	21
Large Institutions	1	0	1	5	6
Semi-Large Institutions	3	0	2	1	15
Pension Funds	2	0	1	3	16
Insurance Companies	2	0	2	3	5

[1]CBS=CBS Index for common stock listed on the Amsterdam Stock Exchange; SBV=SBV Index for real estate companies and REITs listed on the Amsterdam Stock Exchange, not included in CBS Index; FWT=formal written targets.

with the findings of Webb and Louargand, which indicate that most U.S. investors use a real estate index as a benchmark for performance measurement. The fact that no such index exists for real estate in the Netherlands may explain why Dutch investors fail to measure real estate's performance.[13] However, it is curious, then, that no interviewee mentioned the SBV Index for Dutch real estate companies and REITs. The investors did not perceive (a portfolio of) these stocks as a viable alternative to their own real estate portfolio.

Conclusions

The findings of the present study extend the literature on real estate portfolio management practices in several directions. First, face-to-face interviews have been conducted instead of interviews by telephone or mailings of questionnaires. The managing directors of nearly all major Dutch institutional investors participated in the series of interviews, so that a very high response rate was realized.

Second, questions in previous surveys have been modified and extended in this study in order to test their findings. It is concluded that, similar to previous findings, most investors *consciously and rigorously* diversify their real estate portfolio. They rely on either property type or location as the dominant criterion for portfolio building. Furthermore, previous findings on real estate return measurement practices were replicated and extended. Most Dutch investors do not rely on internal rates of return or net present values, but prefer to use simple income capitalization methods. In contrast to previous findings, however, most investors were not found to *consciously and rigorously* adjust for risk when evaluating real estate returns. This may in part reflect the use of the more challenging term "consciously and rigorously." Interestingly, similar usage of this term in the question regarding portfolio diversification did not yield unexpected outcomes. Although investors may, thus, be less sophisticated in adjusting for equity real estate risk than previously concluded, it has also been observed that large institutions more often adjust for risk than semi-large institutions. If innovations "trickle down" from larger to smaller institutions, this finding may be indicative for the future acceptance of more sophisticated risk-adjustment methods.

Third, real estate portfolio management practices in the Netherlands may differ from those in the U.S. and other countries. Dutch institutional investors have, on average, more than 15% of their portfolio allocated to real estate, whereas U.S. institutions have allocated a much smaller percentage of wealth to this asset class. Dutch investors have been known to diversify into foreign real estate markets, including the U.S. Although real estate portfolio management practices of Dutch institutions are somewhat similar to other investors, their motivation for investing equity real estate is quite different. Dutch investors give low priority to the risk-return characteristics of real estate, and also admit that they do not, ex post, measure real estate's performance. The Dutch most often justify real estate investment by referring, instead, to its inflation-hedging capacities.

This finding has been confirmed in a more recent mail survey of Dutch institutional investors by De Wit and Husken (1992). These authors also find Dutch investors, when being asked for the motivation behind their investments in real estate, most often emphasizing its inflation-hedging capacities. It is less obvious, of course, why for that matter Dutch investors would want to include, for instance, U.S. real estate in their portfolios.

Appendix

The Appendix lists the institutions that were asked to participate in the series of interviews. The forty institutions appear in order of magnitude, i.e., book value of real estate assets at year-end 1989, where pension funds and insurance companies are listed separately. The city of residence is given in parentheses. In some instances two or three pension funds are taken together, because they are jointly managed and operated.

Pension Funds

Algemeen burgerlijk pensioenfonds (Heerlen)
Stichting Pensioenfonds voor de Gezondheid, Geestelijke en Maatschappelijke Belangen (Zeist)
Stichting Bedrijfspensioenfonds voor de Bouwnijverheid (Amsterdam)
Stichting Philips Pensioenfonds *A*; Stichting Philips Pensioenfonds *B* (Eindhoven)
Stichting Bedrijfspensioenfonds voor de Metaalindustrie (Amsterdam)
Stichting Shell Pensioenfonds (Rijswijk)
Stichting Bedrijfspensioenfonds voor de Metaalnijverheid (Rijswijk)
Stichting Bedrijfspensioenfonds voor de Landbouw ('s-Gravenhage)
Stichting Pensioenfonds Hoogovens B.V. (Beverwijk)
Stichting Akzo-Pensioenfonds (Arnhem)
Stichting Algemeen Pensioenfonds der KLM, Stichting Pensioenfonds voor het Vliegend Personeel der KLM; Stichting Pensioenfonds KLM-Cabinepersoneel (Amstelveen)
Stichting Pensioenfonds Rabobankorganisatie (Utrecht)
Stichting Pensioenfonds voor de Grafische Bedrijven (Amsterdam)
Stichting Pensioenfonds voor de Vervoer- en Havenbedrijven (Rotterdam)
Stichting Bedrijfspensioenfonds voor het Schildersbedrijf (Rijswijk)
Stichting Bedrijfspensioenfonds voor de Koopvaardij (Amsterdam)
Stichting Unilever Pensioenfonds *Progress* (Rotterdam)
N.V. Pensioenverzekeringsmaatschappij DSM (Heerlen)
Spoorweg Pensioenfonds (Utrecht)
Stichting Pensioenfonds voor de Huisartsen; Stichting Pensioenfonds voor Medische Specialisten (Utrecht)
Stichting Pensioenfonds van de Koninklijke Nedlloyd Groep (Rotterdam)
Stichting Bedrijfspensioenfonds voor het Beroepsvervoer over de Weg (Amsterdam)
Stichting Pensioenfonds voor de Architectenbureaus (Amsterdam)
Algemeen Mijnwerkersfonds van de Steenkolenmijnen in Limburg; Beambtenfonds voor het Mijnbedrijf (Heerlen)
Stichting Bedrijfspensioenfonds voor de Detailhandel (Utrecht)
Stichting Pensioenfonds Stork (Amersfoort)
Stichting Pensioenfonds NMB Postbank Groep (Amsterdam)

Insurance Companies

Nationale-Nederlanden N.V. ('s-Gravenhage)
AEGON N.V. ('s-Gravenhage)
N.V. AMEV (Utrecht)
Delta Lloyd Verzekeringsgroep N. V. (Amsterdam)
Coöperatieve Vereniging *Centraal Beheer* U.A. (Apeldoorn)
Zwitserleven (Amsterdam)
N.V. Verzekeringsgroep de Nederlanden van 1870 (Diemen)
Assurantieconcern Stad Rotterdam anno 1720 N.V. (Rotterdam)
N.V. Interpolis (Tilburg)
Coöperatieve Vereniging Avéro Verzekeringen W.A. (Leeuwarden)
Reaal Verzekeringen N.V. ('s-Gravenhage)
Hooge Huys Verzekeringen N.V. (Alkmaar)
Ohra Verzekeringen N. V. (Arnhem)

Notes

[1]For a discussion of several aspects of pension schemes in the Netherlands, see Van Loo (1988).
[2]In contrast to U.S. pension funds, Dutch pension funds have since long been known to internationally diversify their real estate portfolio. Funken (1991, p. 37) estimates the percent allocation to foreign real estate at 25.8% of the total real estate portfolio in 1989, up from 14.4% in 1979. These figures include investments in U.S. and Canadian real estate, which have risen from 2.7 to 14.4 percentage points, i.e., to over half of all foreign real estate investments by Dutch pension funds.
[3]See Webb for a review of previous surveys of real estate portfolio management practices.
[4]The survey by Brzeski et al. elicited a 61% response rate, but was directed primarily at "property-holding companies" and construction/development firms. For the Swedish insurance companies and pension funds that were included in the sample (fourteen), no specific response rate is given.
[5]The findings of the latter survey have also been described in Boyd and MacGillivray (1992).
[6]However, a more recent mail survey of Dutch institutional investors by De Wit and Husken (1992) elicited a relatively high response rate of 56%. Thus, concerns about the responsiveness of institutional investors in the Netherlands may appear to be somewhat overstated.
[7]The latter type of questions pertain to the results provided in Exhibits 6, 7, 12 and 13. Also, one question being accompanied by a list of alternative real estate risk-adjustment methods did yield only a few answers, which have therefore been discussed in the text only. In any case, the order of the alternatives put to interviewees matches the order in which they appear in each table.
[8]Besides real estate partnerships and shares of (open-end) real estate funds, the vast majority of Dutch institutions' real estate assets consists of fully owned equity holdings. These are typically valued at either historical costs or market value. Dutch institutions are required to have revolving independent appraisals of 20% of their real estate assets each year, and they should mention the outcomes separately in their annual reports under the historical costs approach, or change the assets' book value accordingly (market value approach). Thus, book value of real estate assets may either not reflect any changes in market values or present these with a marked time-lag, depending on which accounting approach the institutional investor chooses to apply.

This practice appears to be in line with U.K. accounting standards, which require property appraisals at least every five years by an external appraiser (see Barkham and Purdy, 1992). Although the "20%-appraisal" practice does not necessarily bias reported market values, it does understate risk as inferred from consecutive changes in market values. Geltner (1993) theoretically investigates the effects of various types of temporal aggregation on risk measures. From his analysis, it can be concluded that the "20%-appraisal" practice understates the variance (standard deviation) of returns by a factor 5 ($\sqrt{5}$).
[9]This should rebalance the sample, which excludes small institutions, where "small" may refer to an institutional investor with more than NLG 1 billion worth of assets under management, but with less than 10% of it invested in equity real estate. By excluding institutions with a very large allocation to equity real estate, the sample should be more representative for the average Dutch institutional investor.
[10]About half of the time (i.e., on average, forty-five minutes) was allocated to the subject matter of the present paper. The second half of each interview was allocated to the issue of whether or not high transaction costs affect real estate portfolio management practices (results not reported in the present paper).
[11]Webb defines the broker's rate of return as the sum of cash flow and equity build-up in percent of initial equity. Since, in general, the Dutch institutions do not finance real estate investments with debt, the broker's rate of return has been interpreted as cash-on-cash return plus appreciation.
[12]Furthermore, empirical findings in the literature have been contradictory. Hartzell, Hekman and Miles (1987) and Wurtzebach, Mueller and Machi (1991) provide evidence on the inflation-hedging capacity of equity real estate. However, Chan, Hendershott and Sanders (1990), for instance, find

that the impact of changes in expected inflation on REIT returns is insignificant, and that REIT returns are significantly less sensitive to unexpected changes in inflation rates than common stock returns.

[13]This may change if a major performance-measurement company in the Netherlands succeeds in putting together a satisfactory index of Dutch real estate values. Some large institutions already have their equity real estate performance measured by this particular company, which is reflected in the percentages of answers listed as "Other" (see Exhibit 13).

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